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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 09/691,126 | 10/19/2000 | Kakuichi Shiomi | 1560-0349P | 5093 |
| 7590 | 10/03/2003 | | EXAMINER | |
| BIRCH, STEWART, KOLASCH & BIRCH, LLP P.O. Box 747 Falls Church, VA 22040-0747 | | | OPSASNICK, MICHAEL N | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2655 | |

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/691,126 | SHIOMI ET AL | |
| | Examiner | Art Unit | |
| | Michael N. Opsasnick | 2655 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 October 2000.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 11 is/are allowed.
- 6) Claim(s) 1-5 and 7-10 is/are rejected.
- 7) Claim(s) 6 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) Interview Summary (PTO-413) Paper No(s). _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Allowable Subject Matter

2. Claim 11 is allowable over the prior art of record.
3. Claim 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1,2,3,7,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanevsky et al (6236968) in view of Byrnes (6400310).

As per claims 1,7 Kanevsky et al (6236968) teaches a sleep prevention car system based on the recognition of driver's voice patterns (abstract, fig. 2, col. 2 line 51 – col. 3 line 60), and determining a threshold of alertness of the driver (col. 3 line 60 – col. 4 line14). Kanevsky et al (6236968) does not explicitly teach using Lyapunov exponents in a chaos analysis of the voice data, however, Byrnes (6400310) uses Lyapunov exponents (col. 17 lines 15-20, col. 18 line 20 – col. 21 line 54) for the use in a speech recognition system (col. 3 lines 40-45). Therefore, it would have been obvious to one of ordinary skill in the art of speech signal processing to modify the teachings of over Kanevsky et al (6236968) with Lyapunov type signal processing for speech recognition because it would advantageously provide more accurate signal processing over a finite amount of data (Byrnes, col. 2 lines 6-14,lines 34-40).

As per claim 2, Kanevsky et al (6236968) teaches a microphone and A/D conversion (col. 2 lines 44-51)

As per claims 3,10, Kanevsky et al (6236968) teaches recording/storage of the voice information (fig. 1, subblock 121/122 - as the storage of driver voice profile)

6. Claims 4,5,8,9, are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kanevsky et al (6236968) in view of Byrnes (6400310) in further view of Sakamoto et al (5404422).

As per claims 4,8, the combination of Kanevsky et al (6236968) in view of Byrnes (6400310) does not explicitly teach the removal of a voiceless section of speech data before the recognition process, however, Sakamoto et al (5404422) teaches the removal of a voiceless portion of speech data (Sakamoto et al, col. 2 lines 47-51). Therefore, it would have been obvious to one of ordinary skill in the art of speech recognition to modify the combination of Kanevsky et al (6236968) in view of Byrnes with voiceless sound removal because it would increase the accuracy of the recognition rate of the utterance (Sakamoto et al (5404422), col. 2 lines 21-32).

As per claims 5,9, the combination of Kanevsky et al (6236968) in view of Byrnes (6400310) in further view of Sakamoto et al (5404422) teaches the ability to process differing lengths of voice data in the Lyapunov exponent calculations (Byrnes (6400310), col. 10 lines 15-18 – the fixed window length forces the data to be a certain length).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see related art listed on the PTO-892 form.
8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231
or faxed to:
(703) 872 9314,
(for informal or draft communications, please label "PROPOSED" or "DRAFT")
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal
Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (703)305-4089, who is available Tuesday-Thursday, 9AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To, can be reached at (703)305-4827. The facsimile phone number for this group is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (703) 305-4750, the 2600 Customer Service telephone number is (703) 306-0377.

mno
9/23/03


DORIS H. TO 9/28/03
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600